

REMARKS

Amendments to the Claims

Double Patenting Rejection

The entry of a **Terminal Disclaimer** herewith renders this rejection moot.

Claim Rejections under 35 U.S.C. § 103

Applicant respectfully submits that the Examiner has failed to make a prima facie case for obviousness under 35 U.S.C. § 103(a) for claims 59-68. “To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” MPEP § 2143.

The mere fact that references can be combined or modified is not sufficient to establish *prima facie* obviousness. MPEP § 2143.01. “Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined *only* if there is some suggestion or incentive to do so.” In re Fritch, 972 F.2d 1260, 23

USPQ2d 1780, 1783 (Fed. Cir. 1992), quoting ACS Hosp. Systems, Inc. v. Montefiore Hosp.,
732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984) (Emphasis in original).

For all of the section 103 rejections detailed below, the Examiner has combined and/or modified references based on impermissible hindsight reasoning without any teaching, suggestion, or motivation in the references or in the knowledge of one skilled in the art. It is respectfully submitted that the Examiner is unable to point to any information in the references themselves which motivates the stated combinations or modifications and relies entirely on information from the present application itself. Even when these references are combined and/or modified, the combined and/or modified references fail to teach or suggest all of the claim limitations.

Finally, Applicant submits that, where the Examiner has based the obviousness rejection on a combination of more than one reference, these references come from fields of art that are not analogous to one another nor to Applicant's field of art and thus it would not be obvious for one skilled in Applicant's field of art to combine such disparate references. MPEP § 2141.01(a) ("To rely on a reference under 35 U.S.C. § 103, it must be analogous prior art.")

1. Rejection of Claims 59-60 under 35 U.S.C. § 103(a)

The Examiner rejected claims 59-60 under 35 U.S.C. § 103(a) as being unpatentable over the non-patent literature, Bayliss et al., "The Combined Effect of Hydrogen Peroxide and Ultraviolet Irradiation on Bacterial Spores", Journal of Applied Bacteriology 47:263-269 (1979) in view of Blidschun et al. (U.S. Patent No. 4,680,163). For the reasons set forth below, Applicant respectfully disagrees and requests that this rejection be withdrawn.

a. No teaching, suggestion, or motivation to combine the references

In this case there is no suggestion in the references or in the knowledge generally available to one of ordinary skill in the art to combine the teachings of Bayliss et al. with those of Blidschun et al. The Examiner is unable to point to anything in the references or in the knowledge generally available to one of ordinary skill in the art which would teach, suggest, or motivate one skilled in the art to combine the cited references. In fact, the cited references are in very different fields of art from one another as well as from the claimed invention. Bayliss et al. describes methods of decontamination of small dishes of cultured bacterial spores under controlled laboratory conditions, while Blidschun et al. pertains to methods of sterilizing packaging materials in a controlled factory environment. In both cases the materials to be decontaminated – dishes filled with pure cultures of spores in Bayliss et al. and consistent and uniform packaging materials in Blidschun et al. – are of a highly predictable nature. In contrast the claimed system of the present application is designed for “decontamination or disinfection in a relatively unconfined or uncontrolled environment or situation.” See paragraphs [0014] – [0015] of the published application, Publ. No. US 2004/0219057.

b. No reasonable expectation of success:

Furthermore, even in the unlikely case that one skilled in the art were to consider combining the references to produce the claimed invention, they would not have a reasonable expectation of success. One skilled in the art who read Blidschun et al. would have concluded that one could not build an effective sterilizing system without use of ultrasonic atomization. See Blidschun et al., col. 2 line 58 through col. 3 line 23 (contrasting effectiveness of sterilization by

ultrasonically-atomized droplets with level of sterilization achieved when droplets are formed by prior art techniques). Therefore, Blidschun et al. in fact teaches away from the present system wherein effective sterilization is achieved without the need for ultrasonic atomization of the sprayed droplets and teaches one skilled in the art that there would not be a reasonable expectation of success using the claimed system.

c. The cited prior art references do not teach or suggest all of the claim limitations:

Most importantly, the combination of Bayliss et al. and Blidschun et al. fails to teach or suggest all of the limitations of claims 59 and 60. Specifically, Blidschun et al. does not teach providing a conducting backing for a non-conducting surface. In all of the embodiments disclosed in Blidschun et al. the grounded electrode 13, 13a, 13b fails to make contact with the container 15 that is being treated. Thus the container 15 is not ‘backed’ by the electrode (13, 13a, 13b) as in claim 59. Indeed, in the embodiments shown in Figures 2 and 3 the shape of the electrode 13a, 13b is very different from the shape of the container 15 that is being treated, supporting the idea that there is no requirement for the electrode to make contact with the container in order for droplets to be electrostatically deposited on the container. Instead, there is an electric field established between the inner 12 and outer 13 electrodes which drives the droplets onto the surface of the container 15. *See* Blidschun et al., col. 5 lines 17-33. Further evidence that the container 15 in Blidschun et al. is not in contact with the electrode 13, 13a, 13b, comes from the statement that “a surface charge will build up [on the container 15] as the droplets are deposited.” Blidschun et al., col. 5 lines 26-29. If the container 15 were in contact

with the grounded electrode 13, 13a, 13b, then instead of charge building up the charge would be carried to the electrode as the droplets were deposited.

In contrast, the element of claim 59 of “providing a conducting backing for the non-conducting surface” indicates that there is contact between the backing and the non-conducting surface. This contact permits “the charged particles resulting from the electro-spraying [to] be attracted to, and adhere to, the surface to be treated.” Paragraph [0037] of Publ. No. US 2004/0219057.

Thus since neither Bayliss et al. nor Blidschun et al. teach “providing a conducting backing for the non-conducting surface”, as well as the fact that there is no motivation to combine the references nor a reasonable expectation of success if one were to combine them, Applicant respectfully submits that the Examiner has failed to make a *prima facie* case for rejection under 35 U.S.C. § 103(a).

2. Rejection of Claim 61 under 35 U.S.C. § 103(a)

The Examiner rejected claim 61 under 35 U.S.C. 103(a) as being unpatentable over Sizer et al. (U.S. Patent No. 5,843,374). For the reasons stated below, Applicant respectfully disagrees and requests that this rejection be withdrawn.

As an initial matter, Sizer et al. addresses a very different problem from that of the claimed invention, namely treatment of uniform and predictable materials that are used for packaging as compared to a field-deployable system for decontamination of varying and unpredictable materials. Due to these differences, one skilled in the art would not have been motivated to modify the teachings of Sizer et al. to produce the claimed apparatus.

More importantly, however, Sizer et al. lacks several elements of claim 61 and there is no teaching, suggestion, or motivation in Sizer et al. or in the knowledge of one skilled in the art to modify the reference to produce the claimed invention. Among other elements, claim 61 calls for “[1] a temperature control system for heating said photosensitizer [2] with waste heat from said light source.”

Sizer et al. fails to disclose an apparatus which includes a temperature control system for heating or otherwise controlling the temperature of the photosensitizer solution. Thus there is no teaching, suggestion, or motivation for one skilled in the art to modify the apparatus of Sizer et al. to make an apparatus which can heat the photosensitizer solution, as in claim 61.

Sizer et al. also fails to disclose an apparatus which provides for heating the photosensitizer solution using waste heat from the light source. Because Sizer et al. is directed towards an apparatus for use in a temperature-controlled factory setting where minimizing energy usage is not a factor, one skilled in the art who reads Sizer et al. would not be motivated by this reference or any other knowledge available to one skilled in the art to modify the teachings of the reference to produce an apparatus such as in claim 61.

As stated in Applicant’s response to the previous Office action, Sizer et al. in fact teaches away from an apparatus such as in claim 61 which uses the waste heat generated by a light source to control the temperature of a photosensitizer solution. Sizer et al. presents the waste heat generated by the light source as a problem to be overcome in designing an apparatus rather than a potential advantage for the apparatus. Sizer et al. teaches that heat from the light source can destroy the packaging materials and teaches that use of an excimer ultraviolet lamp is preferable

because it generates less heat than traditional mercury-based ultraviolet lamps. Thus one skilled in the art who reads Sizer et al. is taught to minimize generation of heat in the first place and is not taught, suggested, or motivated to produce an apparatus which utilizes waste heat in a productive manner.

3. Rejection of Claims 62-66 under 35 U.S.C. § 103(a)

The Examiner rejected claims 62-66 under 35 U.S.C. § 103(a) as being unpatentable over the non-patent literature, Bayliss et al, in view of Blidschun et al. and Vitta, Stewart et al., or Sutton. For the reasons stated below, Applicant respectfully disagrees and requests that this rejection be withdrawn.

Once again the Examiner has failed to make a *prima facie* case of obviousness under 35 U.S.C. § 103(a). First, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine the teachings of the references. The references all come from widely varying and disparate fields of endeavor: Bayliss (laboratory/research setting using spores in a Petri dish); Blidschun (factory setting, decontamination of packaging materials); and Vitta (portable chamber for person to remove contaminated clothing), Stewart et al. (mobile structure in which contaminated person can take a shower), or Sutton (mobile structure for housing people when the outside environment is contaminated). Thus there is no motivation for one skilled in the art to combine the teachings of such widely varying references, each of which addresses a different problem.

Finally and most importantly, the cited references when taken as a whole do not teach or suggest all of the elements of claims 62-66. In particular the references when taken as a whole do not teach or suggest attracting an overspray of an electrically charged photosensitizer to a portable barrier or depositing the overspray upon the portable barrier. Bayliss et al. do not spray photosensitizer onto the samples and thus none of the teachings of Bayliss et al. are applicable to these claim elements. Vitta, Stewart et al., and Sutton do not teach or suggest spraying, electrostatically or otherwise, of decontaminating or photosensitizing chemicals onto contaminated surfaces. Stewart et al. merely disclose a mobile building for providing simple water showers; however, containing overspray of plain water is not a concern. Furthermore, to the extent that the showering facilities of Stewart et al. are surrounded by walls, this would not have taught, suggested, or motivated one skilled in the art to provide a portable barrier for decontamination spraying since such walls or other containment means are a normal part of any shower, e.g. for privacy.

Additionally, in Blidschun et al. overspray is not a concern because of the design of the overall system, wherein overspray is prevented by delivering precise amounts of sterilant (col. 5, lines 23-26; col. 6, lines 23-27) and in some embodiments designing electrodes to capture all droplets before leaving the vessel to be deposited on the inside of the container (col. 5, line 63 through col. 6, line 2). Thus Blidschun et al. teaches away from providing a barrier, portable or otherwise, for containing and capturing overspray – instead Blidschun et al. teaches dealing with this issue by preventing overspraying in the first place. Furthermore, in Blidschun et al. the outer electrode 13, 13a, 13b is not a “barrier” in the sense of the present application and by no stretch

of the imagination could the outer electrode be considered a “portable barrier.” Finally, the outer electrode 13, 13*a*, 13*b* of Blidschun et al. would not teach, suggest, or motivate one skilled in the art to provide a portable barrier as in claim 62.

Regarding claims 63, 64, and 66, since none of the references, either alone or in combination, teach providing a portable barrier as in the claims, it follows that these claims also fail to teach, suggest, or motivate electrically charging or grounding such a barrier or making the barrier substantially opaque to UV light. It also follows that taken as a whole the references fail to disclose a method as in claims 62-66 in which the light includes UV light, as claimed in claim 65.

4. Rejection of Claims 67-68 under 35 U.S.C. § 103(a)

The Examiner rejected claims 67-68 under 35 U.S.C. § 103(a) as being unpatentable over the non-patent literature, Bayliss et al, in view of Blidschun et al. and Vitta, Stewart et al., or Sutton. For the reasons stated below, Applicant respectfully disagrees and requests that this rejection be withdrawn.

Regarding the combination of the cited references, please refer to the arguments presented above explaining why one skilled in the art would not make such a combination.

Even if one were to combine the teachings of the above-cited references, however unlikely such combination, the combined references when taken alone or together do not teach or suggest all of the elements of claims 67 and 68. Specifically the references do not teach or suggest “establishing an air flow into the exit and out of the entrance.” Vitta, Stewart et al., and

Sutton teach maintaining compartments at positive (Sutton, col. 6 lines 5-9) or negative (Vitta, col. 4 lines 22-26; Stewart et al., col. 4 lines 7-9) pressure. While the structures disclosed by these references have entrances and exits, none of these references teach or suggest establishing an air flow from the exit to the entrance. In fact Sutton teaches away from such an air flow plan because this reference teaches having a positive pressure inside the structure so as to force air out through both the entrance and the exit. Sutton, col. 6 lines 9-17. Similarly, if one were to combine the vacuum outlet port of Fig. 7 of Vitta with the multiple opening 46 design shown in Fig. 1, all air would flow in through both the entrance and the exit.

The advantages of a continuous air flow from exit to entrance are that (1) the compartment does not have to be substantially air-tight, as is required to generate positive or negative pressure (see, e.g., col. 6 lines 5-17 of Sutton); and (2) the lack of a requirement for an air-tight compartment simplifies setup and maintenance of the system and permits more rapid throughput than would be possible otherwise.

It follows that since taken as a whole the references fail to disclose a method as in claim 67, the references also fail to disclose such as system wherein the light includes light of a wavelength of between about 200 nm and about 320 nm, as claimed in claim 68.

Conclusion

For the reasons discussed above, applicant respectfully submits that all of the claims are allowable over the prior art of record.

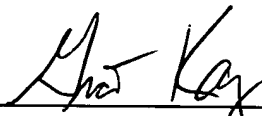
All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all

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presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, he is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

 10/19/05

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